

# PATENT ABSTRACTS OF JAPAN

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(21)Application number : 05-103751

(71)Applicant : EBARA INFILCO CO LTD  
EBARA RES CO LTD

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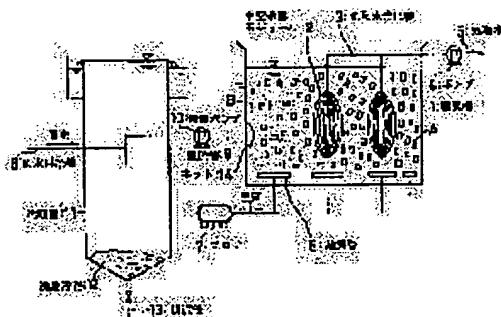
(72)Inventor : KATAOKA KATSUYUKI

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## (54) HOLLOW FIBER MEMBRANE SEPARATION BIOLOGICAL TREATMENT AND DEVICE FOR ORGANIC DRAINAGE

### (57)Abstract:

PURPOSE: To prevent the adhesion and solidification and press densification of sludge to membrane, keep the surface clean at all times and eliminate the necessity of maintenance work by coexisting biological granular solids in an aeration tank, keeping the solids in the suspension flowing state by aeration and discharging treated water through a hollow fiber membrane.



CONSTITUTION: In the hollow fiber membrane separation biological treatment method, urethane foam square grains A, the gravity of which is almost equal to that of water, are fed into an aeration tank 1, and microbes such as BOD utilized bacteria are carried on microbe carriers composed of the grains A. Also water to be treated in the tank 1 is disturbed by diffused air exhausted from an air blower 7 through an air diffusion pipe 6, and the grains A are suspension flowed by the turbulence generated by the diffused air. A membrane module 2 fitted with hollow fiber membrane is immersed in the tank 1, and the water treated biologically in the tank 1 is sucked by a pump 4, passed through the membrane module 2, filtered by the hollow fiber membrane fitted thereon and flowed out of a treated water outflow pipe 3 in the

form of cleaing treated water 5 completely free from SS.

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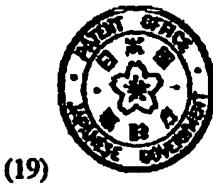
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**(54) HOLLOW FIBER  
MEMBRANE SEPARATION  
BIOLOGICAL TREATMENT  
AND DEVICE FOR  
ORGANIC DRAINAGE**

## (57) Abstract:

**PURPOSE:** To prevent the adhesion and solidification and press densification of sludge to membrane, keep the surface clean at all times and eliminate the necessity of maintenance work by coexisting biological granular solids in an aeration tank, keeping the solids in the suspension flowing state by aeration and discharging treated water through a hollow fiber membrane.

**CONSTITUTION:** In the hollow fiber membrane separation biological treatment method, urethane foam square grains A, the gravity of which is almost equal to that of water, are

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【図2】本発明の生物処理に使用する粒状微生物担体の1例を示す斜視図。

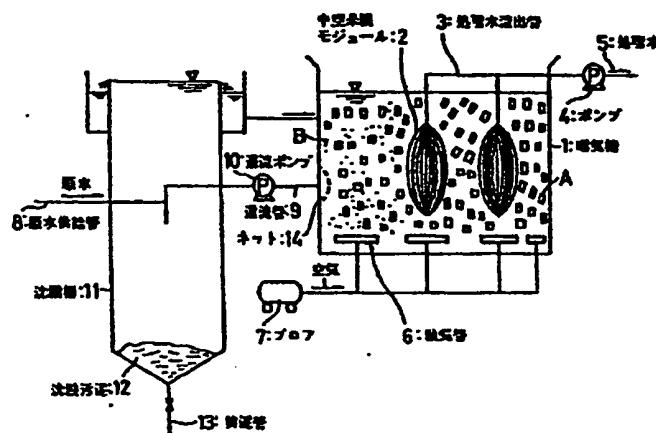
## 【符号の説明】

- 1 嘴気管
- 2 中空糸膜モジュール
- 3 処理水流出管
- 4 ポンプ
- 5 処理水
- 6 空気管
- 7 空気源 (プロワー)

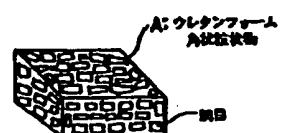
- 8 原水供給管
- 9 被処理水還流管
- 10 還流ポンプ
- 11 沈殿槽
- 12 沈殿汚泥
- 13 搅拌管
- 14 ネット
- A ウレタンフォーム角状粒状物
- B 浮遊微生物

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【図1】



【図2】



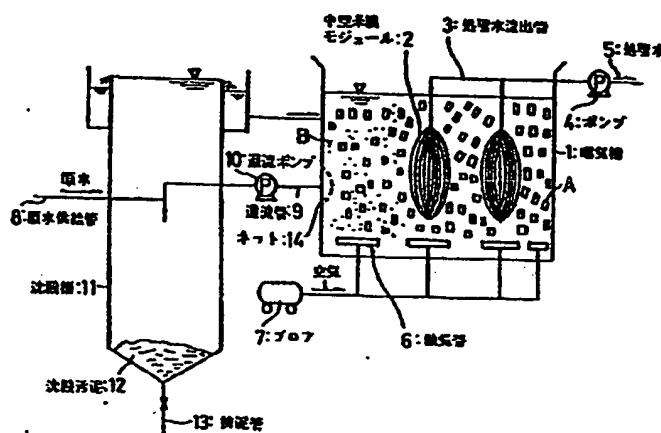
【図2】本発明の生物処理に使用する粒状微生物担体の1例を示す斜視図。

【符号の説明】

- 1 噴気槽
- 2 中空糸膜モジュール
- 3 処理水流出管
- 4 ポンプ
- 5 処理水
- 6 散気管
- 7 空気源 (プロワー)

- 8 原水供給管
- 9 被処理水還流管
- 10 送流ポンプ
- 11 沈殿槽
- 12 沈殿汚泥
- 13 排泥管
- 14 ネット
- A ウレタンフォーム角状粒状物
- B 浮遊藻生物

【図1】



【図2】



